



**SOKOINE UNIVERSITY OF AGRICULTURE**

**COLLEGE OF AGRICULTURE**

**DEPARTMENT OF FOOD  
TECHNOLOGY, NUTRITION AND CONSUMER SCIENCES**

**FIELD PRACTICAL TRAINING GUIDELINES  
FOR THE  
BSC. FOOD SCIENCE AND TECHNOLOGY DEGREE PROGRAMME  
JUNE 2016**

## **1.0 INTRODUCTION**

### **1.1. Background information**

The food science and technology degree program aims at providing a degree-level education in food science and technology, from which the graduates can enter a career in the food industry or employment in other sectors of the food chain, or related scientific sectors and; to develop capacity to undertake research into the science and problems relating to the production and marketing of safe and quality foods. The programme is, therefore, designed to develop the knowledge and skills required by those involved in post-harvest food value addition chain, regulatory and advisory services.

One of the weaknesses of the food science and technology graduates that were even pointed out by stakeholders in tracer studies supported by FOCAL/PANTIL program was the poor practical skills. Others weaknesses reported by graduates included inadequate infrastructure, e.g., poorly equipped University laboratories that culminated into an increase of subject matter theory components at the expense of practice and, the limited hands-on skills. The lack of food pilot plant facilities at the University further necessitates the field practical training (FPT) of students through attachment to the food industry and allied institutions having requisite state-of-art facilities in order to effectively merge theory and practice.

The major aims of FPT include:

- (i) To impart practical skills, like the use of industrial equipment and carrying out routine food manufacture unit operations;
- (ii) To provide practical knowledge on use of best practices from the farm gate to fork to ensure food safety and quality;
- (iii) To provide practical knowledge on economics of food manufacture;

- (iv) To develop abilities in planning, organizing, solving problems and communicating;
- (v) To foster positive attitudes, such as awareness, responsibility, conscientiousness, linkage among the food commodity value chain stakeholders;

To-date most of the aforementioned aims have not been achieved by the FPT due to a number of challenges in the organization and conduct of the FPT within the College of Agriculture (CoA). These challenges include inadequate funding, lack of the appropriate and sufficient number of FPT stations, poor and inadequate supervision.

The FPT is an essential requirement of the three-year B.Sc. (Food Science and Technology) degree programme and shall be conducted for 5 weeks at the end of the fourth and sixth semesters, for 2nd year students and 3rd year students, respectively. FPT will involve attachment of students to food industries/utilities and allied institutions. A special committee comprising of field practical supervisors shall make the assessment of the field practical training. A pass in the FPT shall be required before a candidate is allowed to proceed to the next semester or to graduate in case of a student in the last semester.

## **1.2 Objectives of FPT**

### **1.2.1. General objective**

The general objective of the FPT for BSc Food Science and Technology, as in other degree programs under College of Agriculture (CoA), is to enable the students to get hands-on skills to complement theoretical and practical instructions offered at the University.

### **1.2.2 Specific objectives**

The specific objectives are to:

- (i) Provide an opportunity to apply theoretical knowledge and practical skills gained in class to current practice in the food industry
- (ii) Train skills, e.g., in using food processing and analytical equipment, carrying out routine unit operations, marketing, etc.
- (iii) Provide knowledge, e.g., best practices, good manufacturing practices, good hygienic practices, quality assurance, marketing and production economics
- (iv) Develop abilities, e.g., of planning, organizing, executing, mitigating problems, communicating with professionals in the industry
- (v) Foster attitudes, e.g., entrepreneurship tendencies, sense of responsibility, conscientiousness, analytical in operations cost effectiveness, team work, etc.
- (vi) Create a foundation for employment in public and private sectors.

## **2. SCOPE OF THE FPT GUIDELINES**

These Guidelines are intended to provide the basis for implementing the FPT for BSc Food Science and Technology students in the Department of Food Technology, Nutrition and Consumer Sciences. The Guidelines provides:

- The General Regulations for FPT – these regulations provide all relevant information to ensure efficient conduct of the FPT programme under CoA;
- Clarifications on the kind of reports which are expected to be produced by the students at various levels of FPT;
- Procedures to be used by both local supervisors at FPT stations and the academic supervisor from SUA in supervising the FPT, assessing and grading of the FPT performance of students.

These guidelines are, therefore, intended to be a resource book for students, on station-FPT training officers and supervisors.

### **3. PREPARATION OF FIELD PRACTICAL TRAINING**

The FPT in the Department of Food, Nutrition and Consumer Sciences(DFNCS) shall be conducted effective at the end of the fourth and the sixth semester for five weeks each. DFNCS is solely responsible for allocating FPT places to all students. However, students may be allowed to propose FPT utility or institution of their own at least eight weeks before commencement of the FPT. All proposed FPT centres need to be approved by the Department before commencement of the FPT.**Training at a station not approved and not allocated by the Department before the start of the training will not be recognized.**

### **4. PROCEDURE TO BE FOLLOWED DURING FPT**

- 4.1. The students must read and ensure that they are conversant with the FPT Guidelines for BSc Food Science and Technology degree program (downloadable from SUA website) throughout the FPT period. Before departure for FPT, each the student will be provided with FPT Logbook, a letter of introduction to the allocated FPT station, Arrival Note (Appendix 1) form and ‘On-Station FPT Assessment Form’ (Appendix 2).
- 4.2 The “arrival” note form prepared and issued by the Department to each student will be filled and returned to the department by the student within the first week of FPT (Appendix 1).
- 4.3 The training officer (On-station Supervisor) will ensure that the training program is set up and shared with the FPT coordinator/SUA supervisor before the end of the first week of FPT. This program will form the basis for supervision and assessment when SUAsupervisor visits the station.

- 4.4 Each student will be visited by the SUA supervisor at least once during each FPT period. The purpose of the visit is to co-supervise the FPT and provide an opportunity to share and gather experience about FPT at the station; and to discuss challenges of mutual interest as well as to contribute to the training programme and guide students on report writing. In addition, the SUA supervisor shall be responsible for guiding the on-station supervisor on how to fill the 'On-Station FPT Assessment Form' (Appendix 2).
- 4.5 The student is responsible for bringing the duly filled (by on-station supervisor) 'On-Station FPT Assessment Form' in a sealed, confidential envelope together with his/her Logbooks and FPT reports to the Department FPT Coordinator.

## **5. TRAINING LEVELS**

Students at different levels of learning possess different skills and abilities and the tasks they are expected to perform during FPT should differ accordingly. Therefore, each FPT session is intended to impart technical competence to students according to level of training achieved as follows:

**FPT 1:** This is for the 2nd year students in the B.Sc. Food Science and Technology degree program. The 2nd year B.Sc. Food Science and Technology students do their first FPT immediately after the end of semester 4 University examinations. Students in the second year of study already possess basic knowledge in food science and technology and should be given an opportunity to familiarize themselves with the requirements of the professional practice in the capacity of skilled worker-technologist.

**FPT 2** This is for the 3rd year students in the B.Sc. Food Science and Technology degree programme. Students in their third year of study will undertake the FPT immediately after the end of semester 6 University examinations. Students in the third year of study already possess substantial knowledge in food science and technology and should be given an opportunity to familiarize themselves with the requirements of the professional practice in the capacity of professional level. In addition to the tasks mentioned above for FPT 1, they can also carry out tests and experiments, do supervisory work, planning, design, modify existing practices or introduction of new innovation; carry out management decisions.

## **6. FIELD PRACTICAL TRAINING LOGBOOKS AND REPORTS**

### **6.1 FPT Logbooks**

For each of the FPT sessions (FPT1 or FPT2), each student will be provided with an FPT Logbook in which he/she will be required to record day to day FPT activities carried at the station for the whole FPT period. The Logbook has to be compiled at FPT station. For any week, the Logbook consists of the following:

- Daily record giving short description of actual work done (Appendix 3)
- Weekly summary of essential activities (work) performed in the week (Appendix 4)

The Logbooks have to be checked and signed weekly by the On-station supervisor/Training officer. Together with Logbooks, each student is also required to write and submit general and technical reports which will be assessed by the SUA academic staff who supervised the student's FPT. A space for writing these reports is provided in the Logbooks (immediately after the weekly reports)

## **6.2. The FPT Reports**

### **6.2.1 Objectives of the General and Technical FPT reports**

The objectives the General and Technical FPT reports are to foster and to reflect on:

- (i) Students understanding and appreciation of food industry practices;
- (ii) Students appreciation of what might be their responsibilities after graduation and of the people they will have to work with
- (iii) Students' abilities to communicate scientific information

### **6.2.2. Guidelines for preparation and submission of FPT reports**

Every student is required to submit a written report at the end of the field practical training (FPT) period. This report is to be compiled in accordance with the FPT guidelines. Before being submitted to the Department for assessment, the completed reports have to be signed by the student and counter signed by the Training Officer at the FPT station where the student took the training. The reports to be submitted shall consist of two parts: a **General report** and a **Technical report**. However, it is expected that the emphasis and contents in the different sections of the report will differ depending on the year of study for the FPT. Consequently, the assessment of the different sections of the reports will reflect the emphasis in the different FPT years as shown on the assessment of FPT1 and FPT2 (Table 1).

FPT reports must be submitted together with Logbooks to the Department by or before the end of the second week after the FPT training period; otherwise one would be deemed to have failed FPT.

#### **6.2.2.1 The general report**

The aim of the general part of the FPT report is to describe the activities of the utility, organization, institution or company where the FPT is conducted including description of the

departments/sections in which the student will be attached. In addition, the report is intended to show the inter-relationships within the organization and its linkages with other institutions. Illustrations such as the organization chart may be used to elaborate on responsibilities and flow of information within the organization. For that matter the general report shall include:

- Background information of the institution/company (FPT Station), organization and its management set up (including organization chart), that is the goal, purpose and objectives/aims of the organizations with aspects to the government development strategies.
- Production and work performance at FPT Station
- Research or production thrust at FPT Station
- Community involvement and benefits around the FPT Station
- Relevance of programmes carried out to environmental developmental and policy issues.

#### **6.2.2.2. The technical reports**

The technical reports are aimed at giving the opportunity to the students to contribute their own opinion on possible solutions for existing problems on such matters or issues relevance to BSc Food Science and Technology curriculum.

The report should consist of two parts:

- (i) Weekly report, which consists of the summary of tasks performed throughout the week, including description of one main job performed that week.
- (ii) Final report, technically describing a particular food manufacturing or quality assurance process. The technical process may consist of an aspect such as: description of a particular food process; the use of best practices in food processing at all stages involved.

The description of these issues should consider as much food science, technology, safety, economic aspects, such as:

- The science and technology used to manufacture a specific food product
- Processing stages and flow charts
- Raw material reception, documentation, platform quality tests and traceability
- Quality assurance during processing, storage and distribution
- Best practices, e.g. good manufacturing practices, good hygienic practices, identification of critical control points, plant layouts
- Equipment cleaning, assembly, maintenance, fault diagnosis
- Waste treatment and environmental pollution control
- Process economics and marketing strategies
- Entrepreneurial tendencies
- socio-economic aspects that might be considered to address some of the challenges faced by a particular firm

The description may include various illustrations including sketches, drawings or photos and should be presented on a standard A4 size sheet (Appendix 3)

## **7.0 ORGANIZATION/PLANNING OF FPT AND SUPERVISION**

Organization and planning of the supervision of FPT in the Department of Food Technology, Nutrition and Consumer Sciences will be undertaken by Departmental FPT Committee with guidance from the Head of Department, and facilitation by the office of the Principal, the College of Agriculture. The SUA FPT supervisors shall be appointed by the Head of Department of Food Technology, Nutrition and Consumer Sciences which hosts the BSc Food Science and Technology degree programme.

The person who will be working with the students and responsible for the day to day supervision of the students at the FPT stations shall be the Training Officer (Local supervisor) appointed by

the management of the FPT station(utility, organization, institute or company) from among the senior technical personnel.

### **7.1 Duties of the On-station supervisors (Training Officers)**

The appointed On-station supervisors (Training Officers)are expected to ensure the smooth running of the FPT at the station and report accordingly. Since the Training Officer has other responsibilities, he/she should treat the students just like other workers who are responsible to him/her in terms of productivity, efficiency and discipline.

The student is expected to work somehow independently requiring minimum supervision from the Training Officer. In any case, the Training Officer should give only limited assistance to the students.

The duties of the On-station supervisors (Training Officers) shall therefore include the following:

- To prepare suitable training programme for the student(s) (if possible in collaboration with the supervisor from Department of Soil and Geological Sciences)
- To administer and follow up the training programme
- To sign the student' reports and log books once every week
- advise/guide students on FPT reports writing
- To complete the 'Arrival Note' and fill the 'On-Station FPT Assessment Form' for each student.

### **8.0 REGULATIONS ON ASSESSMENT OF FPT LOG BOOKS AND REPORTS**

- 8.1. All students must report to the allocated FPT stations only. A student who fails to report to the allocated FPT station without permission from FPT coordinator shall be deemed to have failed the FPT and shall be required to undertake the FPT at his/her own time and cost during the next FPT session
- 8.2. To avoid duplication and repeating of FPT activities, no student shall be allocated to the same station for FPT1 and FPT2
- 8.3. FPT Logbooks and reports will be assessed and marked by the academic staff who supervised the students' FPT, and the results will be subject to consideration by the Department Examiners Board before submission to the College Board for approval.
- 8.4. The FPT marking/assessment shall involve the following components:

- Continuous (day-to-day) assessment made by the On-Station Supervisor during FPT period. This shall contribute 30% of the overall assessment as shown in Table 1 and Appendix 2
  - Logbooks, written General and Technical reports– all assessed by the SUA supervisor (70%)
  - Qualitative Character Assessment for each student made by the On-Station Supervisor for the entire FPT period (see Appendix 2). A penalty shall be imposed on final FPT score in case of bad character assessment made by the On-station supervisor. The penalty level shall be determined by the score in Part 2 of the ‘On-station FPT assessment form’
  - The criterion for final (overall) FPT assessment is as detailed in Table 1. The emphasis on report content is as indicated by assessment weights, and this change according to the year of study.
- 8.5. Each student will be required to pass the FPT1 (year 2) and FPT2 (year 3) before graduation. The FPT pass mark is 50%
- 8.6. A student failing FPT will be required to repeat/supplement the FPT at his/her own cost.
- 8.7. Not completing a full FPT period without compelling reasons means abscondment from that FPT and the student shall be discontinued from studies.
- 8.8. A student failing to complete FPT with compelling reasons shall be required to request for postponement of the remaining FPT component, and if allowed shall complete the remaining part of the FPT during the vacation or when next offered.
- 8.9. A student allowed to postpone FPT shall be required to undertake the FPT during the vacation or when next offered
- 8.10. A student who fails after doing FPT as a third attempt shall be required to retake the course and if he fails for the fourth time shall be discontinued from studies.
- 8.11. A student who will be reported to have performed any gross misconduct during FPT period shall be reported to the University Management and such case will be dealt with according to the SUA Students’ by-laws.

**Table 1 OverallFPT Assessment Form**

**FIELD PRACTICAL ASSESSMENT FORM (Overall marks)**

Candidate Name: ..... Reg. No: ..... FPT: **1,II,III** (tick)  
 Examiner's Name: ..... Department: ..... Date: .....

ITEM	Maximum score		Scored marks
	FPT I	FPT II/III	Examiner
<b>Assessment by the Training Officer at the FPT Station</b>			
1. Skills obtained	6	6	
2. Attitude to work	6	6	
3. Initiative and independence	6	6	
4. Reliability	6	6	
5. Adherence to time working time	6	6	
<b>Total marks by Training Officer</b>	<b>30</b>	<b>30</b>	
<b>Assessment of the Logbook (by the SUA supervisor)</b>			
1. Adherence to guidelines	15	5	
2. Presentation (neatness)	5	5	
<b>Total marks (Logbook)</b>	<b>20</b>	<b>10</b>	
<b>Assessment of the FPT Reports (by SUA supervisor)</b>			
<b>General report</b>	<b>15</b>	<b>10</b>	
<b>Technical Report:</b>			
1. Description/analysis	10	10	
2. Problem identification	5	10	
3. Discussion	10	15	
4. Recommendation(s)	5	10	
5. Neat (illustrations, etc.)	5	5	
<b>Total marks - Reports</b>	<b>50</b>	<b>60</b>	
<b>TOTAL MARKS</b>	<b>100</b>	<b>100</b>	
Penaltyfor Character Assessment (max. -20 marks)			
<b>GRAND TOTAL SCORE (%)</b>			

Remarks by SUA Examiner:

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 .....

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**FPT STATION ARRIVAL NOTE**

**PART A (To be filled by student)**

Name of student: .....

Year of study: ..... FPT No.....

I declare that I have started working with [Name of the FPT Station]

.....

Address: P.O. Box.....

E-mail.....

Location.....

Tel. No: .....

Date of starting FPT: .....

Student's mobile phone No: .....

Student's email address: .....

Signature of student: ..... Date:.....

**PART B (To be filled by On-Station Supervisor)**

I certify that the information given above is correct to the best of my knowledge.

Name of On-Station Training Supervisor: .....

Position: .....

Mobile phone: .....

Email address: .....

On-Station Supervisor's signature: ..... Date: .....

Official rubber stamp

*To be sent by the student (throughpost or email)immediately after arrival to:*

FPT Coordinator (BSc Food Science and Technology degree program)  
Department of Food technology, Nutrition and Consumer Sciences  
Sokoine University of Agriculture  
P.O. Box 3006, SUA,Morogoro; Email: .....

**Appendix 2: On-Station Student's FPT Assessment Form**

**ON-STATION FPT ASSESSMENT FORM** [to be filled by On-station supervisor]

This is to certify that Mr./Ms. .... [Name of the Student]  
has completed a period of field practical training with our Institution from ..... to  
..... [Dates] Name of the Institution .....

The trainee has worked at the level of '**Food Field Assistant**'/'**Food Field Officer**' [Tick one] and the duties assigned to the trainee were [List]:

.....  
.....  
.....

Name of On-Station Supervisor: ..... Position: .....

**PART 1: PRACTICAL/WORKING SKILLS**

Please assign a grade between 0 and 6 to each one of the items 1 to 5 below according to the following grading scale:

- 5.1 – 6.0: Excellent
- 4.1 – 5.0: Very good
- 3.1 – 4.0: Good
- 2.1 – 3.0: Satisfactory
- < 2.1: Fail

1. Place the grade in dotted lines for each item.
  - i) Skills obtained .....
  - ii) Attitude to work .....
  - iii) Initiative and Independence .....
  - iv) Reliability .....
  - v) Adherence to working time .....
2. Number of days the trainee was absent from work.....  
Reason(s) for absence.....
3. Was the logbook submitted to you weekly for your comments and signature? (**Yes/No**).....
4. Was there any gross misconduct (e.g. lack of respect to supervisors, fighting, destruction of property, use of abusive language, drunkardness during working time, stealing, etc) by the student at any time during working hours in the entire FPT period? (**Yes/No**).

If **Yes** provide brief description .....

.....

.....

.....

**PART 2 CHARACTER SKILLS ASSESSMENT** (*tick whichever is applicable*)

S/N	CHARACTER/SKILLS ASSESSED	Outstanding	Above average	Average	Below average	Poor
1.	Ability to work in a team					
2.	Dependability, Reliability and Trustworthiness)					
3.	Demonstration of a sense of maturity					
4.	Ability to lead, motivate and resolve conflicts					
5.	Ability to devote working time exclusively to work related duties					

**REMARKS**

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Training Officer's name: ..... Position: .....

Signature ..... Date and Place: .....  
 ..... Official rubber stamp

**Appendix 3. Sample of Logbook Daily Record**

<b>FIELD PRACTICAL TRAINING LOGBOOK SHEET</b>		
Weekly Report No.	Week from:	To:
	Brief description of work performed	Hours
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Total hours per week		
Signature of Training Officer:		Date

**Appendix 4.A sample of blank sheet for Weekly Summary**

<b>FIELD PRACTICAL TRAINING LOGBOOK SHEET</b>	
<b>WEEKLY SUMMARY</b>	<b>Week from:</b> _____ <b>To:</b> _____
<b>Name</b> _____	<b>Date</b> _____